GenCore version 4.5

OM protein - protein search, using sw model

Run on: October 1, 2001, 19:02:48 ; Search time 97.54 Seconds
(without alignments)
576.779 Million cell updates/sec

Title: US-09-446-677B-2
Perfect score: 4782
Sequence: 1 MKTSIPWVLVSSVLAFSCHL.....MELRGSSRNYNVDVGTKLRF 928

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 412676 seqs, 60623988 residues

Total number of hits satisfying chosen parameters: 412676

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_0601:*
1: /SIDS1/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDS1/gcgdata/geneseq/geneseqp/AA1981.DAT:*
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21: /SIDS1/gcgdata/geneseq/geneseqp/AA2000.DAT:*
22: /SIDS1/gcgdata/geneseq/geneseqp/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	4782	100.0	928	20	AAW88417	Chlamydia pneumoni
2	4782	100.0	928	21	AAY90236	Chlamydia antigen
3	4774	99.8	949	20	AAY35060	Chlamydia pneumoni
4	1862	38.9	918	21	AAY69369	Amino acid sequenc
5	1855	38.8	928	21	AAY94327	Chlamydia pneumoni
6	1853	38.7	928	20	AAW88421	Chlamydia pneumoni
7	1836	38.4	918	20	AAW88422	Chlamydia pneumoni
8	1793	37.5	928	20	AAW88423	Chlamydia pneumoni
9	1787	37.4	928	21	AAY90239	Chlamydia antigen
10	1785	37.3	928	20	AAW88418	Chlamydia pneumoni
11	1763	36.9	930	20	AAY35052	Chlamydia pneumoni
12	1758.5	36.8	927	20	AAY35054	Chlamydia pneumoni
13	1757	36.7	928	21	AAY90237	Chlamydia antigen
14	1755	36.7	930	20	AAW88424	Chlamydia pneumoni
15	1755	36.7	930	21	AAY90240	Chlamydia antigen
16	1734	36.3	936	21	AAY99842	Chlamydia pneumoni
17	1732	36.2	914	20	AAW88429	Chlamydia pneumoni
18	1705	35.7	925	21	AAY99843	Chlamydia pneumoni
19	1685	35.2	885	21	AAY90238	Mature Chlamydia a
20	1634.5	34.2	945	21	AAY69368	Amino acid sequenc
21	1621.5	33.9	945	20	AAW88428	Chlamydia pneumoni
22	1432.5	30.0	841	21	AAY92818	C. pneumoniae CPN1
23	1429.5	29.9	841	20	AAW88420	Chlamydia pneumoni
24	1348	28.2	922	21	AAY95548	Chlamydia pneumoni
25	1345	28.1	922	20	AAY34597	Chlamydia pneumoni
26	1344	28.1	922	20	AAW88419	Chlamydia pneumoni
27	1286	26.9	643	20	AAY35056	Chlamydia pneumoni
28	1278.5	26.7	973	21	AAY96274	Chlamydia POMP91B
29	1132.5	23.7	597	20	AAY34611	Chlamydia pneumoni
30	1130.5	23.6	671	20	AAY35050	Chlamydia pneumoni
31	1092.5	22.8	1013	20	AAY16737	C. trachomatis B s
32	1090	22.8	1012	20	AAY16735	C. trachomatis LGV
33	1089.5	22.8	1013	20	AAY16738	C. trachomatis F s
34	1080.5	22.6	1006	21	AAB13639	C. trachomatis pmp
35	1069.5	22.4	982	21	AAB13633	C. trachomatis pmp
36	1015.5	21.2	1132	20	AAY35048	Chlamydia pneumoni
37	995	20.8	507	20	AAY34614	Chlamydia pneumoni
38	882	18.4	610	20	AAW88431	Chlamydia pneumoni
39	850	17.8	880	21	AAB13632	C. trachomatis pmp
40	843.5	17.6	494	20	AAY34615	Chlamydia pneumoni
41	842	17.6	866	21	AAB13638	C. trachomatis pmp
42	831.5	17.4	427	20	AAY34613	Chlamydia pneumoni
43	827	17.3	483	20	AAY34609	Chlamydia pneumoni
44	785	16.4	450	20	AAY34617	Chlamydia pneumoni
45	779.5	16.3	530	20	AAY35064	Chlamydia pneumoni

ALIGNMENTS

RESULT 1
AAW88417
ID AAW88417 standard; Protein; 928 AA.
XX
AC AAW88417;
XX
DT 26-APR-1999 (first entry)
XX
DE Chlamydia pneumoniae surface exposed protein Omp4.
XX
KW Omp4; outer membrane protein 4; surface exposed protein; antigen;
KW infection; diagnosis; vaccine; atherosclerosis; asthma.
XX
OS Chlamydia pneumoniae.
XX
PN WO9858953-A2.
XX
PD 30-DEC-1998.
XX
PF 19-JUN-1998; 98WO-DK00266.
XX
PR 23-JUN-1997; 97DK-0000744.
XX
PA (BIRK/) BIRKELUND S.
PA (CHRI/) CHRISTIANSEN G.
XX
PI Birkelund S, Christiansen G, Knudsen K, Madsen A;
PI Mygind P;
XX
DR WPI; 1999-105610/09.
DR N-PSDB; AAX06816.
XX
PT Species-specific test for identifying mammals infected with
PT Chlamydia pneumoniae - comprises detecting antibodies specific for

```
PT   outer membrane proteins of C. pneumoniae or nucleic acids encoding
PT   these proteins
XX
PS   Claim 7; Page 40-42; 115pp; English.
XX
CC   This polypeptide comprises the novel 98.9 kDa surface exposed
CC   protein Omp4 of the human respiratory pathogen Chlamydia
CC   pneumoniae.  Its amino acid sequence was deduced from DNA (see
CC   AAX06816) isolated from a C. pneumoniae expression library.  The
CC   invention provides 12 novel surface exposed proteins, Omp4-Omp15
CC   (see AAW88417-28), and nucleic acid sequences encoding them (see
CC   AAX06816-27).  A new species specific test is claimed that is used
CC   to identify mammals (including humans) infected with Chlamydia
CC   pneumoniae.  The test comprises detecting antibodies specific for
CC   Omp4-Omp15 or detecting nucleic acid fragments encoding these outer
CC   membrane proteins, especially by PCR.  The proteins are also used
CC   in the diagnosis of C. pneumoniae infection in mammals.  The
CC   nucleic acids and proteins can also be used in the immunization of
CC   mammals, the nucleic acids being particularly useful as DNA
CC   vaccines for effecting in vivo expression of antigens.  The
CC   vaccines may also prevent atherosclerosis and bronchial asthma,
CC   which are possibly associated with C. pneumoniae.
XX
SQ   Sequence   928 AA;


  Query Match           100.0%;  Score 4782;  DB 20;  Length 928;
  Best Local Similarity  100.0%;  Pred. No. 0;
  Matches  928;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MKTSIPWVLVSSVLAFSCHLQSLANEELLSPDDSFNGNIDSGTFTPKTSATTYSLTGDVF 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 mktsipwvlvssvlafschlqslaneellspddsfngnidsgtftpktsattysltgdvf 60

Qy      61 FYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANKNLTFSGFS 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 fyepgkgtplsdscfkqttdnltflgnghsltfgfidagthagaaasttanknltfsgfs 120

Qy     121 LLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGASFLLTGTSGD 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 llsfdsspsttvttgqgtlssaggvnlenirklvvagnfstadggaikgasflltgtsgd 180

Qy     181 ALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSILSNNKFLYF 240
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Db     181 alfsnnssstkggaiattagarianntgyvrflsniastsggaiddegtsilsnnkflyf 240

Qy     241 EGNAAKTTGGAICNTKASGSPELIISNNKTLIFASNVAETSGGAIHAKKLALSSGGFTEF 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 egnaakttggaicntkasgspeliisnnktlifasnvaetsggaihakklalsggfteF 300

Qy     301 LRNNVSSATPKGGAISIDASGELSLSAETGNITFVRNTLTTTGSTDTPKRNAINIGSNGK 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 lrnnvssatpkggaisidasgelslsaetgnitfvrntlttTgstdtpkrnainigsngk 360

Qy     361 FTELRAAKNHTIFFYDPITSEGTSSDVLKINNGSAGALNPYQGTILFSGETLTADELKVA 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     361 ftelraaknhtiffydpitsegtssdvlkinngsagalnpyqgtilfsgetltadelkva 420

Qy     421 DNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDSGTTLSTTAGSITITNLG 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     421 dnlkssftqpvslsggkllLqkgvtlestsfsqeagsllgmdsgttlsttagsititnlg 480

Qy     481 INVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHMFSHDQLFSLLKITVDAD 540
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Db     481 invdslglkqpvsltakgasnkvivsgklnlidiegniyeshmfshdqlfsllkitvdad 540

Qy     541 VDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKEATATWTKTGFVPSPERKS 600
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Db     541 vdtnvdisslipvpaedpnseygfqgqwnvnwttdtatntkeatatwtktgfvpsperks 600

Qy     601 ALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNFLHKTGDENRKGFRHTSGG 660
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Db     601 alvcntlwgvftdirslqqlveigatgmehkqgfwvssmtnflhktgdenrkgfrhtsgg 660

Qy     661 YVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGTLFFKHSHTLQPQNYLRLG 720
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Db     661 yviggsahtpkddlftfafchlfardkdcfiahnnsrtyggtlffkhshtlqpqnylrlg 720

Qy     721 RAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPESEGSWSNECIAGGIGLDL 780
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     721 rakfsesaiekfpreiplaldvqvsfshsdnrmethytslpesegswsneciaggigldl 780

Qy     781 PFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGFSIGRLLNLSIPVGAKFVQGD 840
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy     841 IGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGNLSRQAFLLRGSNNYVYNSN 900
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Db     841 igdsytydlsgffvsdvyrnnpqstatlvmspdswkirggnlsrqafllrgsnnyvynsn 900

Qy     901 CELFGHYAMELRGSSRNYNVDVGTKLRF 928
           ||||||||||||||||||||||||||||
Db     901 celfghyamelrgssrnynvdvgtklrf 928


RESULT   2
AAY90236
ID   AAY90236 standard; Protein; 928 AA.
XX
AC   AAY90236;
XX
DT   29-AUG-2000  (first entry)
XX
DE   Chlamydia antigen CPN100634.
XX
KW   Chlamydia antigen; diagnosis; infection; community acquired pneumonia;
KW   therapy; upper respiratory tract disease; bronchitis; sinusitis;
KW   asthmatic bronchitis; adult-onset asthma; acute exacerbations of asthma.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO200032794-A2.
XX
PD   08-JUN-2000.
XX
PF   01-DEC-1999;   99WO-CA01147.
XX
PR   01-DEC-1998;   98US-0110339.
PR   01-DEC-1998;   98US-0110340.
PR   01-DEC-1998;   98US-0110427.
PR   01-DEC-1998;   98US-0110428.
PR   01-DEC-1998;   98US-0110438.
XX
PA   (CONN-) CONNAUGHT LAB LTD.
XX
PI   Murdin AD,  Oomen RP,  Wang J;
XX
DR   WPI; 2000-412339/35.
DR   N-PSDB; AAA30847, AAA30848.
XX
PT   Nucleic acids encoding polypeptide antigens from Chlamydia useful for
PT   preventing, diagnosing and treating diseases such as community acquired
PT   pneumonia, bronchitis, sinusitis and asthmatic bronchitis, adult-onset
PT   asthma -
XX
PS   Claim 16; Fig 1; 174pp; English.
XX
CC   This sequence is a Chlamydia antigen of the invention, designated
CC   CPN100634. The nucleic acids (and their complementary sequences) may be
CC   used as diagnostic agents for detecting the presence of nucleic acids
CC   encoding Chlamydia antigens in samples according to standard methods,
CC   and therefore, for diagnosing Chlamydia infections. For example, they may
CC   be used as primers and probes for diagnostic polymerase chain reaction
CC   (PCR) assays. Antisense sequences may be used to down regulate
CC   expression of the proteins and may be used to treat infections. The
CC   nucleic acids may also be used to produce the protein antigens they
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CC   encode according to standard recombinant DNA methodologies. The
CC   proteins may then be used as antigens for the production of antibodies
CC   (i.e. as vaccines) for preventing infection by Chlamydia. The
CC   antibodies may also be used as diagnostic reagents for detecting
CC   infections. Chlamydia is a pathogen implicated in the development of
CC   (for example) community acquired pneumonia, upper respiratory tract
CC   disease (especially bronchitis and sinusitis, asthmatic bronchitis,
CC   adult-onset asthma and acute exacerbations of asthma in adults.
XX
SQ   Sequence   928 AA;


  Query Match            100.0%;  Score 4782;  DB 21;  Length 928;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  928;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 MKTSIPWVLVSSVLAFSCHLQSLANEELLSPDDSFNGNIDSGTFTPKTSATTYSLTGDVF 60
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Qy     61 FYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANKNLTFSGFS 120
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Qy    121 LLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGASFLLTGTSGD 180
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Db    121 llsfdsspsttvttgqgtlssaggvnlenirklvvagnfstadggaikgasflltgtsgd 180

Qy    181 ALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSILSNNKFLYF 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 alfsnnssstkggaiattagarianntgyvrflsniastsggaiddegtsilsnnkflyf 240

Qy    241 EGNAAKTTGGAICNTKASGSPELIISNNKTLIFASNVAETSGGAIHAKKLALSSGGFTEF 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy    301 LRNNVSSATPKGGAISIDASGELSLSAETGNITFVRNTLTTTGSTDTPKRNAINIGSNGK 360
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Db    301 lrnnvssatpkggaisidasgelslsaetgnitfvrntlttgstdtpkrnainigsngk 360

Qy    361 FTELRAAKNHTIFFYDPITSEGTSSDVLKINNGSAGALNPYQGTILFSGETLTADELKVA 420
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Db    361 ftelraaknhtiffydpitsegtssdvlkinngsagalnpyqgtilfsgetltadelkva 420

Qy    421 DNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDSGTTLSTTAGSITITNLG 480
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Db    421 dnlkssftqpvslsggkllqkgvtlestsfsqeagsllgmdsgttlsttagsititnlg 480

Qy    481 INVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHMFSHDQLFSLLKITVDAD 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 invdslglkqpvsltakgasnkvivsgklnlidiegniyeshmfshdqlfsllkitvdad 540

Qy    541 VDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKEATATWTKTGFVPSPERKS 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 vdtnvdisslipvpaedpnseygfqgqwnvnwttdtatntkeatatwtktgfvpsperks 600

Qy    601 ALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNFLHKTGDENRKGFRHTSGG 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    601 alvcntlwgvftdirslqqlveigatgmehkqgfwvssmtnflhktgdenrkgfrhtsgg 660

Qy    661 YVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGTLFFKHSHTLQPQNYLRLG 720
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    661 yviggsahtpkddlftfafchlfardkdcfiahnnsrtyggtlffkhshtlqpqnylrlg 720

Qy    721 RAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPESEGSWSNECIAGGIGLDL 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    721 rakfsesaiekfpreiplaldvqvsfshsdnrmethytslpesegswsneciaggigldl 780

Qy    781 PFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGFSIGRLLNLSIPVGAKFVQGD 840
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    781 pfvlsnphplfktfipqmkvemvyvsqnsffesssdgrgfsigrllnlsipvgakfvqgd 840

Qy    841 IGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGNLSRQAFLLRGSNNYVYNSN 900
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    841 igdsytydlsgffvsdvyrnnpqstatlvmspdswkirggnlsrqafllrgsnnyvynsn 900

Qy    901 CELFGHYAMELRGSSRNYNVDVGTKLRF 928
          ||||||||||||||||||||||||||||
Db    901 celfghyamelrgssrnynvdvgtklrf 928


RESULT   3
AAY35060
ID   AAY35060 standard; Protein; 949 AA.
XX
AC   AAY35060;
XX
DT   13-SEP-1999  (first entry)
XX
DE   Chlamydia pneumoniae cellular envelope protein.
XX
KW   Respiratory disease; pneumonia; bronchitis; heart disease; sarcoidosis;
KW   sinusitis; purulent otitis media; erythema nodosum; pharyngitis;
KW   vaccine; neutralising epitope.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO9927105-A2.
XX
PD   03-JUN-1999.
XX
PF   20-NOV-1998;   98WO-IB01890.
XX
PR   04-NOV-1998;   98US-0107078.
PR   21-NOV-1997;   97FR-0014673.
XX
PA   (GEST ) GENSET.
XX
PI   Griffais R;
XX
DR   WPI; 1999-357842/30.
XX
PT   Genome sequence of Chlamydia pneumoniae
XX
PS   Page 947-949; Disclosure; 1912pp; English.
XX
CC   AAY34584-Y35879 represent the proteins encoded by all the open reading
CC   frames in the complete genome (see AAX91990) of Chlamydia pneumoniae.
CC   C. pneumoniae causes respiratory disease such as pneumonia and
CC   bronchitis and is thought to be a contributing factor in heart
CC   disease, sarcoidosis, sinusitis, purulent otitis media, erythema
CC   nodosum or pharyngitis. The polypeptides encoded by the open reading
CC   frames of the C. pneumoniae genome (see AAY34584-Y35879) can be used in
CC   immunogenic compositions as vaccines. Vectors containing C. pneumoniae
CC   nucleotides sequences can also be used as immunogenic compositions,
CC   especially where the vector directs the expression of a neutralising
CC   epitope of C. pneumoniae.
XX
SQ   Sequence   949 AA;


  Query Match            99.8%;  Score 4774;  DB 20;  Length 949;
  Best Local Similarity   99.9%;  Pred. No. 0;
  Matches  927;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 MKTSIPWVLVSSVLAFSCHLQSLANEELLSPDDSFNGNIDSGTFTPKTSATTYSLTGDVF 60
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Qy     61 FYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANKNLTFSGFS 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     82 fyepgkgtplsdscfkqttdnltflgnghsltfgfidagthagaaasttanknltfsgfs 141

Qy    121 LLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGASFLLTGTSGD 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    142 llsfdsspsttvttgqgtlssaggvnlenirklvvagnfstadggaikgasflltgtsgd 201
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Qy    181 ALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSILSNNKFLYF 240
          ||||||||||||||||||||||||||| |||||||||||||||||||||||||||||||||
Db    202 alfsnnssstkggaiattagarianntgxvrflsniastsggaiddegtsilsnnkflyf 261

Qy    241 EGNAAKTTGGAICNTKASGSPELIISNNKTLIFASNVAETSGGAIHAKKLALSSGGFTEF 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    262 egnaakttggaicntkasgspeliisnnktlifasnvaetsggaihakklalssggftef 321

Qy    301 LRNNVSSATPKGGAISIDASGELSLSAETGNITFVRNTLTTTGSTDTPKRNAINIGSNGK 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    322 lrnnvssatpkggaisidasgelslsaetgnitfvrntlttgstdtpkrnainigsngk 381

Qy    361 FTELRAAKNHTIFFYDPITSEGTSSDVLKINNGSAGALNPYQGTILFSGETLTADELKVA 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    382 ftelraaknhtiffydpitsegtssdvlkinngsagalnpyqgtilfsgetltadelkva 441

Qy    421 DNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDSGTTLSTTAGSITITNLG 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    442 dnlkssftqpvslsggkllqkgvtlestsfsqeagsllgmdsgttlsttagsititnlg 501

Qy    481 INVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHMFSHDQLFSLLKITVDAD 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    502 invdslglkqpvsltakgasnkvivsgklnlidiegniyeshmfshdqlfsllkitvdad 561

Qy    541 VDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKEATATWTKTGFVPSPERKS 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    562 vdtnvdisslipvpaedpnseygfqgqwnvnwttdtatntkeatatwtktgfvpsperks 621

Qy    601 ALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNFLHKTGDENRKGFRHTSGG 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    622 alvcntlwgvftdirslqqlveigatgmehkqgfwvssmtnflhktgdenrkgfrhtsgg 681

Qy    661 YVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGTLFFKHSHTLQPQNYLRLG 720
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    682 yviggsahtpkddlftfafchlfardkdcfiahnnsrtyggtlffkhshtlqpqnylrlg 741

Qy    721 RAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPESEGSWSNECIAGGIGLDL 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    742 rakfsesaiekfpreiplaldvqvsfshsdnrmethytslpesegswsneciaggigldl 801

Qy    781 PFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGFSIGRLLNLSIPVGAKFVQGD 840
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    802 pfvlsnphplfktfipqmkvemvyvsqnsffesssdgrgfsigrllnlsipvgakfvqgd 861

Qy    841 IGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGNLSRQAFLLRGSNNYVYNSN 900
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    862 igdsytydlsgffvsdvyrnnpqstatlvmspdswkirggnlsrqafllrgsnnyvynsn 921

Qy    901 CELFGHYAMELRGSSRNYNVDVGTKLRF 928
          ||||||||||||||||||||||||||||
Db    922 celfghyamelrgssrnynvdvgtklrf 949
```

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RESULT   4
AAY69369
ID   AAY69369 standard; Protein; 918 AA.
XX
AC   AAY69369;
XX
DT   19-JUN-2000  (first entry)
XX
DE   Amino acid sequence of the CPN100395 polypeptide.
XX
KW   CPN100395; Chlamydia infection; immune response; vaccine.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO200011183-A2.
XX
PD   02-MAR-2000.
XX
PF   18-AUG-1999;   99WO-IB01449.
XX
PR   20-AUG-1998;   98US-0097187.
PR   20-AUG-1998;   98US-0097188.
PR   20-AUG-1998;   98US-0097189.
PR   20-AUG-1998;   98US-0097190.
PR   20-AUG-1998;   98US-0097195.
PR   20-AUG-1998;   98US-0097196.
PR   20-AUG-1998;   98US-0097197.
PR   27-AUG-1998;   98US-0097191.
PR   17-AUG-1999;   99US-0376770.
XX
PA   (CONN-) CONNAUGHT LAB LTD.
XX
PI   Murdin AD,  Oomen RP;
XX
DR   WPI; 2000-224703/19.
DR   N-PSDB; AAZ61509.
XX
PT   Novel antigens and corresponding DNA molecules that can be used to
PT   prevent, treat and diagnose disease caused by Chlamydia infection in
PT   mammals, especially humans -
XX
PS   Claim 19; Fig 15-E; 201pp; English.
XX
CC   AAY69362-69 represent Chlamydia pneumoniae polypeptides. The
CC   polypeptides are present in the bacterial membrane structure, in the
CC   external vicinity of the membrane structure, in the inclusion membrane
CC   structure, in the external vicinity of the inclusion membrane structure,
CC   and in the cytoplasm of the infected cell. The polypeptides may be
CC   used to prevent, treat and detect the presence of Chlamydia infection
CC   and/or the presence of Chlamydia in a sample. The polypeptides may
CC   also be used to induce an immune response in a mammal. The vaccine
CC   vector comprising the polynucleotides is used to induce an immune
CC   response in a mammal. Antibodies directed against the polypeptides
CC   may also be used therapeutically to treat and/or prevent a Chlamydia
CC   infection.
XX
SQ   Sequence   918 AA;
```

```
  Query Match             38.9%;  Score 1862;  DB 21;  Length 918;
  Best Local Similarity   42.3%;  Pred. No. 3.3e-117;
  Matches  398;  Conservative  156;  Mismatches  352;  Indels   34;  Gaps   12;

Qy      1 MKTSIPWVLVSSVLAFSCHLQSL---ANEELLSPDDSFNGNIDSGTFTPK-----TSATT 52
            |::|   :|:|| |||   | |:   | :  |   ||:||:  :  ||||      | ||
Db      1 mrssfslllissslafpl-lmsvsadaadltlgsrdsyngdtstteftpkaatsdasgtt 59

Qy     53 YSLTGDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANK 112
          | | |||   : || | |: |||  |  |||||||| || |  | : | ||    | ||
Db     60 yildgdvsisqagkqtslttscfsntagnltflgngfslhfdniisstvagvvvsntaas 119

Qy    113 NLT-FSGFSLLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGAS 171
           :| |||| |   ::|    |||:| :    |:  |:|  | :  | |: :||||   :
Db    120 gitkfsgfstlrmlaapr---ttgkgaikitdglvfesignldlnenassenggaintkt 176

Qy    172 FLLTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSI 231
            |||::   |  |||| :|||| :  : |: | | : | :| |:||||||  ||  :
Db    177 lsltgstrfvaflgnsssqqggaiyasgdsvisenagilsfgnnsattsggaisaegnlv 236

Qy    232 LSNNKFLYFEGNAAKTTGGAICNTKASGSPE--LIISNNKTLIFASNVAETSGGAIHAKK 289
          :|||: ::|:|  | | |||| ||  :|:  | :| |::| | :| |  |||||: ||
Db    237 isnnqniffdgckattnggaidcnkaganpdpiltlsgneslhflnntagnsggaiytkk 296

Qy    290 LALSSG-GFTEFLRNNVSSATPKGGAISIDASGELSLSAETGNITFVRNTLTTTGSTDTP 348
          | |||| |   |  |  ::|||||||:|  |||:|:|||: ||| |  || :||||  :
Db    297 lvlssgrggvlfsnnkaanatpkggaiaildsgeisisadlgniifegnttsttgspasv 356

Qy    349 KRNAINIGSNGKFTELRAAKNHTIFFYDPITSEGTSSDVLKINNGSAGALNPYQGTILFS 408
           ||||:: || ||  ||| : : :|||||| | ::| | :|   ||: | |:| |:||
Db    357 trnaidlasnakflnlratrgnkvifydpitssg-atdklslnkadagsgntyegyivfs 415

Qy    409 GETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDSGTTLS 468
```

```
Db    416 geklseeelkkpdnlkstftqavelaagalvlkdgvtvvantitqvegskvvmdggttfe 475

Qy    469 TTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHMFSHDQ 528

Db    476 asaegvtlnglainidsldgtnkaiikataaskdvalsgpimlvdaqgnyyehhnlsqqq 535

Qy    529 LFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKEATATWT 588

Db    536 vfplielsaqgtm-tttdipd---tpilnttnhygyqgnwnivwvddataktknatltwt 591

Qy    589 KTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNFLHKTGD 648

Db    592 ktgykpnperqgplvpnslwgsfvdvrsiqslmdrstsslssstnlwvsgiadflhedqk 651

Qy    649 ENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGTLFFKHS 708

Db    652 gnqrsyrhssagyalgggfftasenffnfafcqlfgydkdhlvaknhthvyagamsyrh- 710

Qy    709 HTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPESEGSWS 768

Db    711 ----------lgesktlakilsgnsdslpfvfnarfayghtdnnmttkytgyspvkgswg 760

Qy    769 NECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGFSIGRLLNL 828

Db    761 ndafgiecggaipvvasgrrswvdthtpflnlemiyahqndfkengtegrsfqsedlfnl 820

Qy    829 SIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGNLSRQAFL 888

Db    821 avpvgikfek--fsdkstydlsiayvpdvirndpgctttlmvsgdswstcgtslsrqall 878

Qy    889 LRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928

Db    879 vragnhhafasnfevfsqfevelrgssrsyaidlggrfgf 918
```

RESULT 5
AAY94327
ID AAY94327 standard; Protein; 928 AA.
XX
AC AAY94327;
XX
DT 11-AUG-2000 (first entry)
XX
DE Chlamydia pneumoniae 98kD putative outer membrane protein.
XX
KW Chlamydia; antigen; vaccine; infection; outer membrane protein.
XX
OS Chlamydia pneumoniae.
XX
PN WO200026237-A2.
XX
PD 11-MAY-2000.
XX
PF 29-OCT-1999; 99WO-GB03579.
XX
PR 29-OCT-1998; 98US-0106070.
PR 01-MAR-1999; 99US-0122066.
PR 27-OCT-1999; 99US-0428122.
XX
PA (CONN-) CONNAUGHT LAB LTD.
XX
PI Murdin AD, Oomen RP, Dunn PL;
XX
DR WPI; 2000-365569/31.
DR N-PSDB; AAA27021.
XX
PT Novel Chlamydia 98 kDa putative outer membrane protein antigen, used
PT for vaccination and protection against Chlamydia infection -
XX
PS Claim 6; Fig 1; 93pp; English.
XX
CC The present sequence is the 98kDa putative outer membrane protein from
CC Chlamydia pneumoniae. The genomic sequence was amplified using two
CC PCR primers. The 5' primer contains a NotI restriction site, a ribosome
CC binding site, an initiation codon and a sequence close to the 5' end of
CC the 98kDa putative outer membrane protein coding sequence. The 3' primer
CC contains the sequence encoding the C-terminal sequence of the putative
CC outer membrane protein and a BsrGI restriction site. The stop codon was
CC excluded and an additional nucleotide was inserted to obtain an in-frame
CC C-terminal fusion with the Histidine tag. The PCR product was cloned
CC into a eukaryotic expression vector (pCA-Myc-His) by restricting both
CC the vector and the PCR product with NotI and BamH1 and performing a
CC ligation reaction. This expression vector was injected intramuscularly
CC and intranasally into mice, which were subsequently inoculated with
CC Chlamydia pneumoniae. The chlamydial lung titers of the immunised mice
CC were lower than those of the controls. Thus the 98kDa putative outer
CC membrane protein can be used as a vaccine to provide protection against
CC Chlamydia infections, especially Chlamydia pneumoniae infections.
CC The present polypeptide may also be administered orally to treat
CC Chlamydia infection.
XX
SQ Sequence 928 AA;

Query Match 38.8%; Score 1855; DB 21; Length 928;
Best Local Similarity 42.7%; Pred. No. 9.8e-117;
Matches 405; Conservative 171; Mismatches 331; Indels 42; Gaps 20;

```
Qy      1 MKTSIPWVLVSSVLAFSCHLQSLANEELLSPDDSFNGNIDSGTFTPKTS----ATTYSLT 56

Db      1 mkssfpkfvfstfaifp--lsmiatetvldssasfdgn-kngnfsvresqedagttylfk 57

Qy     57 GDVFFYE-PGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAA-STTANKNL 114

Db     58 gnvtlenipgtgtaitkscfnntkgditftgngnslllfqtvdagtvagaavnssvvdkst 117

Qy    115 TFSGFSLLSFDSSPSTTVTTGQGTLS-SAGGVNLENIRKLVVAGNFSTADGGAIKGASFL 173

Db    118 tfigfsslsfiaspgssittgkgavscstgslsltknvsllfsknfstdnggaitaktls 177

Qy    174 LTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSILS 233

Db    178 ltgttmsalfsentsskkggaiqtsdaltitgnqgevsfsdntssdsgaaifteasvtis 237

Qy    234 NNKFLYF-----EGNAAKTT----GGAICNTKASGSPELIISNNKTLIFASNVAETSGGA 284

Db    238 nnakvsfidnkvtgassttgdmsggaicayktstdtkvtltgnqmllfsnntsttagga 297

Qy    285 IHAKKLALSSGGFTEFLRNNVSSAT-PKGGAISIDASGELSLSAETGNITFVRNTLTTTG 343

Db    298 iyvkklelasggltlfsrnsvnggtapkggaiaiedsgelslsadsgdivflgntvtst- 356

Qy    344 STDTPKRNAINIGSNGKFTELRAAKNHTIFFYDPIT--SEGTSSDVLKINNGSAGALNPY 401

Db    357 -tpgtnrssidlgtsakmtalrsaagraiyfydpittgssttvtdvlkvnetpadsalqy 415

Qy    402 QGTILFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGM 461

Db    416 tgniiftgeklseteaadsknltskllqpvtlsggtlslkhgvtlqtqaftqqadsrlem 475

Qy    462 DSGTTLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYES 521

Db    476 dvgttle-padtstinnlvinissidgakkakietkatsknltlsgtitlldptgtfyen 534

Qy    522 HMFSHDQLFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWN-VNWTTDTATNT 580

Db    535 hslrnpqsydilelkasgtvts----tavtpdpimgekfhygyqgtwgpivwgtgastt- 589

Qy    581 KEATATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMT 640

Db    590 --atfnwtktgyipnperigslvpnslwnafidisslhylmetaneglqgdrafwcagls 647

Qy    641 NFLHKTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYG 700

Db    648 nffhkdstktrrgfrhlsggyviggnlhtcsdkilsaafcqlfgrdrdyfvaknqgtvyg 707
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Qy    701 GTLFFKHSHTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSL 760
          |||:::|: |     |: |   |    ::   | |||:     :|::|:|| ::| ||:
Db    708 gtlyyqhnet-----yisl-pcklrpcslsyvpteipvlfsgnlsythtdndlktkytty 761

Qy    761 PESEGSWSNECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGF 820
          |  :||| |:  |   |   |  |  :   ||: ::| ||:: ||  |  | |  :: | |
Db    762 ptvkgswgndsfalefggrapicl-desalfeqympfmklqfvyahqegfkeggtearef 820

Qy    821 SIGRLLNLSIPVGAKF-VQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRG 879
            ||:||::|:| :|  : |  |: ||:|:  :  |: |:||  | || :| |||| |
Db    821 gssrlvnlalpigirfdkesdcqda-tynltlgytvdlvrsnpdctttlrisgdswktfg 879

Qy    880 GNLSRQAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
            ||:||| :||  |:: :||| | |  :: ||||||||||||:| | :|
Db    880 tnlarqalvlragnhfcfnsnfeafsqfsfelrgssrnynvdlgakyqf 928


RESULT  6
AAW88421
ID   AAW88421 standard; Protein; 928 AA.
XX
AC   AAW88421;
XX
DT   26-APR-1999  (first entry)
XX
DE   Chlamydia pneumoniae surface exposed protein Omp8.
XX
KW   Omp8; outer membrane protein 8; surface exposed protein; antigen;
KW   infection; diagnosis; vaccine; atherosclerosis; asthma.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO9858953-A2.
XX
PD   30-DEC-1998.
XX
PF   19-JUN-1998;   98WO-DK00266.
XX
PR   23-JUN-1997;   97DK-0000744.
XX
PA   (BIRK/) BIRKELUND S.
PA   (CHRI/) CHRISTIANSEN G.
XX
PI   Birkelund S,  Christiansen G,  Knudsen K,  Madsen A;
PI   Mygind P;
XX
DR   WPI; 1999-105610/09.
DR   N-PSDB; AAX06820.
XX
PT   Species-specific test for identifying mammals infected with
PT   Chlamydia pneumoniae - comprises detecting antibodies specific for
PT   outer membrane proteins of C. pneumoniae or nucleic acids encoding
PT   these proteins
XX
PS   Claim 7; Page 53-55; 115pp; English.
XX
CC   This polypeptide comprises the novel 90.0 kDa surface exposed
CC   protein Omp8 of the human respiratory pathogen Chlamydia
CC   pneumoniae.  Its amino acid sequence was deduced from DNA (see
CC   AAX06820) isolated from a C. pneumoniae expression library.  The
CC   invention provides 12 novel surface exposed proteins, Omp4-Omp15
CC   (see AAW88417-28), and nucleic acid sequences encoding them (see
CC   AAX06816-27).  A new species specific test is claimed that is used
CC   to identify mammals (including humans) infected with Chlamydia
CC   pneumoniae.  The test comprises detecting antibodies specific for
CC   Omp4-Omp15 or detecting nucleic acid fragments encoding these outer
CC   membrane proteins, especially by PCR.  The proteins are also used
CC   in the diagnosis of C. pneumoniae infection in mammals.  The
CC   nucleic acids and proteins can also be used in the immunization of
CC   mammals, the nucleic acids being particularly useful as DNA
CC   vaccines for effecting in vivo expression of antigens.  The
CC   vaccines may also prevent atherosclerosis and bronchial asthma,
CC   which are possibly associated with C. pneumoniae.
XX
SQ   Sequence   928 AA;


  Query Match             38.7%;  Score 1853;  DB 20;  Length 928;
  Best Local Similarity   42.6%;  Pred. No. 1.3e-116;
  Matches  404;  Conservative  171;  Mismatches  332;  Indels   42;  Gaps   20;

Qy      1 MKTSIPWVLVSSVLAFSCHLQSLANEELLSPDDSFNGNIDSGTFTPKTS----ATTYSLT 56
            ||:| |  : |:   |   |  :| | :|    ||:||  :| |: : |     |||
Db      1 mkssfpkfvfstfaifp--lsmiatetvldssasfdgn-kngnfsvresqedagttylfk 57

Qy     57 GDVFFYE-PGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAA-STTANKNL 114
          |:|     || || :: |||  |  :||| |||:|| |  :|||| |||  |:  :|:
Db     58 gnvtlenipgtgtaitkscfnntkgdltftgngnsllfqtvdagtvagaavnssvvdkst 117

Qy    115 TFSGFSLLSFDSSPSTTVTTGQGTLS-SAGGVNLENIRKLVVAGNFSTADGGAIKGASFL 173
          || ||| ||| :|| :::|||:| :| | | :  :    |: : |||| :||||   :
Db    118 tfigfsslsfiaspgssittgkgavscstgslkfdknvsllfsknfstdnggaitaktls 177

Qy    174 LTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSILS 233
          ||||:  |||| |:|| ||||| |:    |  | | | |  | :| || ||  | :  :|
Db    178 ltgttmsalfsentsskkggaiqtsdaltitgnqgevsfsdntssdsgaaifteasvtis 237

Qy    234 NNKFLYF-----EGNAAKTT----GGAICNTKASGSPELIISNNKTLIFASNVAETSGGA 284
          ||  : |       | :: ||    |||||  | |   :: :: |: |:|::| : |:|||
Db    238 nnakvsfidnkvtgassttgdmsggaicayktstdtkvtltgnqmllfsnntsttagga 297

Qy    285 IHAKKLALSSGGFTEFLRNNVSSAT-PKGGAISIDASGELSLSAETGNITFVRNTLTTTG 343
          |: ||| |:||| | | ||:|:  | ||||||:|: ||||||||::|:| |: ||:|:|
Db    298 iyvkklelasggltlfsrnsvnggtapkggaiaiedsgelslsadsgdivflgntvtst- 356

Qy    344 STDTPKRNAINIGSNGKFTELRAAKNHTIFFYDPIT--SEGTSSDVLKINNGSAGALNPY 401
          |    |::|::|:: | | ||:|   |:||||||  |  | :||||:|    | :   |
Db    357 -tpgtnrssidlgtsakmtalrsaagraiyfydpittgssttvtdvlkvnetpadsalqy 415

Qy    402 QGTILFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGM 461
          | |:|:|| |:  |   : || |   |||:|||| | |: ||||:: :|:|:| | | |
Db    416 tgniiftgeklseteaadsknltskllqpvtlsggtlslkhgvtlqtqaftqqadsrlem 475

Qy    462 DSGTTLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYES 521
          | ||||   | : || || ||: |:   :   :  |  |  : :|| : |:|  |  ||:
Db    476 dvgttle-padtstinnlvinissidgakkakietkatsknltlsgtitlldptgtfyen 534

Qy    522 HMFSHDQLFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWN-VNWTTDTATNT 580
          |   : | : :|::     | :    ::: | |       ||:|| |  : | |  :|
Db    535 hslrnpqsydilelkasgtvts----tavtpdpimgekfhygyqgtwgpivwgtgastt- 589

Qy    581 KEATATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMT 640
            ||  |||||::|:|||  :|| |:||  | || ||  |:|    |::  : || : ::
Db    590 --atfnwtktgyipnperigslvpnslwnafidisslhylmetaneglqgdrafwcagls 647

Qy    641 NFLHKTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYG 700
          || ||   : |:|||| ||||||||: ||  | : : ||| || ||:| |:|  |    ||
Db    648 nffhkdstktrrgfrhlsggyviggnlhtcsdkilsaafcqlfgrdrdyfvaknqgtvyg 707

Qy    701 GTLFFKHSHTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSL 760
          |||:::|: |     |: |   |    ::   | |||:     :|::|:|| ::| ||:
Db    708 gtlyyqhnet-----yisl-pcklrpcslsyvpteipvlfsgnlsythtdndlktkytty 761

Qy    761 PESEGSWSNECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGF 820
          |  :||| |:  |   |   |  |  :   ||: ::| ||:: ||  |  | |  :: | |
Db    762 ptvkgswgndsfalefggrapicl-desalfeqympfmklqfvyahqegfkeqgtearef 820

Qy    821 SIGRLLNLSIPVGAKF-VQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRG 879
            ||:||::|:| :|  : |  |: ||:|:  :  |: |:||  | || :| |||| |
Db    821 gssrlvnlalpigirfdkesdcqda-tynltlgytvdlvrsnpdctttlrisgdswktfg 879

Qy    880 GNLSRQAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
            ||:||| :||  |:: :||| | |  :: ||||||||||||:| | :|
Db    880 tnlarqalvlragnhfcfnsnfeafsqfsfelrgssrnynvdlgakyqf 928
```

```
RESULT   7
AAW88422
ID   AAW88422 standard; Protein; 918 AA.
XX
AC   AAW88422;
XX
DT   26-APR-1999  (first entry)
XX
DE   Chlamydia pneumoniae surface exposed protein Omp9.
XX
KW   Omp9; outer membrane protein 9; surface exposed protein; antigen;
KW   infection; diagnosis; vaccine; atherosclerosis; asthma.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO9858953-A2.
XX
PD   30-DEC-1998.
XX
PF   19-JUN-1998;   98WO-DK00266.
XX
PR   23-JUN-1997;   97DK-0000744.
XX
PA   (BIRK/) BIRKELUND S.
PA   (CHRI/) CHRISTIANSEN G.
XX
PI   Birkelund S,  Christiansen G,  Knudsen K,  Madsen A;
PI   Mygind P;
XX
DR   WPI; 1999-105610/09.
DR   N-PSDB; AAX06821.
XX
PT   Species-specific test for identifying mammals infected with
PT   Chlamydia pneumoniae - comprises detecting antibodies specific for
PT   outer membrane proteins of C. pneumoniae or nucleic acids encoding
PT   these proteins
XX
PS   Claim 7; Page 56-58; 115pp; English.
XX
CC   This polypeptide comprises the novel 96.7 kDa surface exposed
CC   protein Omp9 of the human respiratory pathogen Chlamydia
CC   pneumoniae.  Its amino acid sequence was deduced from DNA (see
CC   AAX06821) isolated from a C. pneumoniae expression library.  The
CC   invention provides 12 novel surface exposed proteins, Omp4-Omp15
CC   (see AAW88417-28), and nucleic acid sequences encoding them (see
CC   AAX06816-27).  A new species specific test is claimed that is used
CC   to identify mammals (including humans) infected with Chlamydia
CC   pneumoniae.  The test comprises detecting antibodies specific for
CC   Omp4-Omp15 or detecting nucleic acid fragments encoding these outer
CC   membrane proteins, especially by PCR.  The proteins are also used
CC   in the diagnosis of C. pneumoniae infection in mammals.  The
CC   nucleic acids and proteins can also be used in the immunization of
CC   mammals, the nucleic acids being particularly useful as DNA
CC   vaccines for effecting in vivo expression of antigens.  The
CC   vaccines may also prevent atherosclerosis and bronchial asthma,
CC   which are possibly associated with C. pneumoniae.
XX
SQ   Sequence   918 AA;

  Query Match             38.4%;  Score 1836;  DB 20;  Length 918;
  Best Local Similarity   42.1%;  Pred. No. 1.8e-115;
  Matches  396;  Conservative  155;  Mismatches  355;  Indels   34;  Gaps   12;

Qy       1 MKTSIPWVLVSSVLAFSCHLQSL---ANEELLSPDDSFNGNIDSGTFTPK-----TSATT 52
Db       1 mrssfslllissslafpl-lmsvsadaadltlgsrdsyngdtstteftpkaatsdasgtt 59

Qy      53 YSLTGDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANK 112
Db      60 yildgdvsisqagkqtslttscfsntagnltflgngfslhfdniisstvagvvvsntaas 119

Qy     113 NLT-FSGFSLLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGAS 171
Db     120 gitkfsgfstlrmlaapr---ttgkgaikitdglvfesignldqnenassenggaintkt 176

Qy     172 FLLTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSI 231
Db     177 lsltgstrfvaflgnsssqqggaiyasgdsvisenagilsfgnnsattsggaisaegnlv 236

Qy     232 LSNNKFLYFEGNAAKTTGGAICNTKASGSPE--LIISNNKTLIFASNVAETSGGAIHAKK 289
Db     237 isnnqniffdgckattnggaidcnkaganpdpiltlsgneslhflnntagnsggaiytkk 296

Qy     290 LALSSG-GFTEFLRNNVSSATPKGGAISIDASGELSLSAETGNITFVRNTLTTTGSTDTP 348
Db     297 lvlssgrggvlfsnnkaanatpkggaiaildsgeisisadlgniifegnttsttgspasv 356

Qy     349 KRNAINIGSNGKFTELRAAKNHTIFFYDPITSEGTSSDVLKINNGSAGALNPYQGTILFS 408
Db     357 trnaidlasnakflnlratrgnkvifydpitssg-atdklslnkadagsgntyegyivfs 415

Qy     409 GETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDSGTTLS 468
Db     416 geklseeelkkpdnlkstftqavelaagalvlkdgvtvvantitqvegskvvmdggttfe 475

Qy     469 TTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHMFSHDQ 528
Db     476 asaegvtlnglainidsldgtnkaiikataaskdvalsgpimlvdaqgnyyehhnlsqqq 535

Qy     529 LFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKEATATWT 588
Db     536 vfplielsaqgtm-tttdipd---tpilnttnhygyqgtgiivwvddataktknatltwt 591

Qy     589 KTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNFLHKTGD 648
Db     592 ktgykpnperqgplvpnslwgsfvdvrsiqslmdrstsslssstnlwvsgiadflhedqk 651

Qy     649 ENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGTLFFKHS 708
Db     652 gnqrsyrhssagyalgggfftasenffnfafcqlfgydkdhlvaknhthvyagamsyrh- 710

Qy     709 HTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPESEGSWS 768
Db     711 ----------lgesktlakilsgnsdslpfvfnarfayghtdnnmttkytgyspvkgswg 760

Qy     769 NECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGFSIGRLLNL 828
Db     761 ndafgiecggaipvvasgrrswvdthtpflnlemiyahqndfkengtegrsfqsedlfnl 820

Qy     829 SIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGNLSRQAFL 888
Db     821 avpvgikfek--fsdkstydlsiayvpdvirndpgctttlmvsgdswstcgtslsrqall 878

Qy     889 LRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
Db     879 vragnhhafasnfevfsqfevelrgssrsyaidlggrfgf 918


RESULT   8
AAW88423
ID   AAW88423 standard; Protein; 928 AA.
XX
AC   AAW88423;
XX
DT   26-APR-1999  (first entry)
XX
DE   Chlamydia pneumoniae surface exposed protein Omp10.
XX
KW   Omp10; outer membrane protein 10; surface exposed protein;
KW   antigen; infection; diagnosis; vaccine; atherosclerosis; asthma.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO9858953-A2.
```

```
XX
PD   30-DEC-1998.
XX
PF   19-JUN-1998;   98WO-DK00266.
XX
PR   23-JUN-1997;   97DK-0000744.
XX
PA   (BIRK/) BIRKELUND S.
PA   (CHRI/) CHRISTIANSEN G.
XX
PI   Birkelund S, Christiansen G, Knudsen K, Madsen A;
PI   Mygind P;
XX
DR   WPI; 1999-105610/09.
DR   N-PSDB; AAX06822.
XX
PT   Species-specific test for identifying mammals infected with
PT   Chlamydia pneumoniae - comprises detecting antibodies specific for
PT   outer membrane proteins of C. pneumoniae or nucleic acids encoding
PT   these proteins
XX
PS   Claim 7; Page 60-62; 115pp; English.
XX
CC   This polypeptide comprises the novel 98.4 kDa surface exposed
CC   protein Omp10 of the human respiratory pathogen Chlamydia
CC   pneumoniae. Its amino acid sequence was deduced from DNA (see
CC   AAX06822) isolated from a C. pneumoniae expression library. The
CC   invention provides 12 novel surface exposed proteins, Omp4-Omp15
CC   (see AAW88417-28), and nucleic acid sequences encoding them (see
CC   AAX06816-27). A new species specific test is claimed that is used
CC   to identify mammals (including humans) infected with Chlamydia
CC   pneumoniae. The test comprises detecting antibodies specific for
CC   Omp4-Omp15 or detecting nucleic acid fragments encoding these outer
CC   membrane proteins, especially by PCR. The proteins are also used
CC   in the diagnosis of C. pneumoniae infection in mammals. The
CC   nucleic acids and proteins can also be used in the immunization of
CC   mammals, the nucleic acids being particularly useful as DNA
CC   vaccines for effecting in vivo expression of antigens. The
CC   vaccines may also prevent atherosclerosis and bronchial asthma,
CC   which are possibly associated with C. pneumoniae.
XX
SQ   Sequence   928 AA;

  Query Match             37.5%;  Score 1793;  DB 20;  Length 928;
  Best Local Similarity   42.6%;  Pred. No. 1.5e-112;
  Matches  403;  Conservative  153;  Mismatches  353;  Indels   38;  Gaps   17;

Qy       1 MKTSIPWVLVSSVLAFSCHLQ----SLANEELLSPDDSFNGNIDSGTFTP-----KTSAT 51
           ||:|: | ::|| ||    |    :   |  | | :||:|    ||:||         |
Db       1 mksslhwfvisslalplslnfsafaavveinlgptnsfsg---pgtytppaqttnadgt 57

Qy      52 TYSLTGDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTAN 111
             |:|||||     |  | |: ||||:|| ||:| |:|:      |||| :     :| ||
Db      58 iynltgdvsitnagsptaltascfkettgnlsfqghgyqfllqnidaganc-tftntaan 116

Qy     112 KNLTFSGFSLLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGAS 171
           | |:|||| ||     :|  ||| | : | |  :::        |||  :|||::|:|
Db     117 kllsfsgfsylsl--iqttnattgtgaikstgacsiqsnyscyfgqnfsndnggalqgss 174

Qy     172 FLLTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSI 231
             |:  : :  |: | :: ||||: :| |  | |       |  | |: :||||  | :|
Db     175 isls-lnpnltfaknkatqkggalystggitinntlnsasfsentaannggaiyteassf 233

Qy     232 LSNNKFLYFEGN---AAKTTGGAI-CNTKASGSPELIISNNKTLIFASNVAETSGGAIHA 287
           :|:|| : |  |   |   ||||| |:: ::  | | :|:|  | |  | | ||||||:
Db     234 issnkaisfinnsvtatsatggaiycsstsapkpvltlsdngelnfigntaitsggaiyt 293

Qy     288 KKLALSSGGFTEFLRNN-VSSATPKGGAISIDASGELSLSAETGNITFVRNTLTT-TGST 345
             | ||||| | |  |: : :| | ||||:|  || |||||  |:|||  ||:     |:
Db     294 dnlvlssggptlfknnsaidtaaplggaiaiadsgslslsalggditfegntvvkgasss 353

Qy     346 DTPKRNAINIG-SNGKFTELRAAKNHTIFFYDPITSEGTS--SDVLKINNGSAGALNPYQ 402
             |  ||:|||| :| |  :|||:: :||:||||||:  |:  || | :|         ||
Db     354 qtttrnsinignтnakivqlrasqgntiyfydpittnhtaalsdalnlngpdlagnpayq 413

Qy     403 GTILFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMD 462
           |||:|||| |:  |   ||||||:  ||:::|:||:| |: |||| : ||||  || | ||
Db     414 gtivfsgeklseaeaaeadnlkstiqqpltlaggqlslksgvtlvaksfsqspgstllmd 473

Qy     463 SGTTLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESH 522
           :|||| |  | ||| || :|||||   :  :| |  ||  | :|| |:|:|  ||:||
Db     474 agttletadg-itinnlvlnvdslketkkatlkatqasqtvtlsgslslvdpsgnvyedv 532

Qy     523 MFSHDQLFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKE 582
            ::: |:|| | :|  ||   |: |: |   | |     :|:|| | ::|  |||| :|
Db     533 swnnpqvfscltlt--addpanihitdlaadpleknpihwgyqgnwalswqedtatkska 590

Qy     583 ATATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNF 642
           || ||||||: |:|||:  || ||||| | |:||:|||       :  :| |   ::||
Db     591 atltwtktgynpnperrgtlvantlwgsfvdvrsiqqlvatkvrqsqetrgiwcegisnf 650

Qy     643 LHKTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGT 702
           ||   :  |||||  | |||:| :      |:| | ||| || :|:| ||  | :  |  :
Db     651 fhkdstkinkgfrhisagyvvgatttlasdnlitaafcqlfgkdrdhfinknrasayaas 710

Qy     703 LFFKHSHTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPE 762
           |  :|  ||   : ||     |||       | |:  | |:|: :| | |:|:||  |:
Db     711 lhlqhlatlsspsllry--lpgses-------eqpvlfdaqisyiysktmktyytqapk 761

Qy     763 SEGSWSNECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSD-GRGFS 821
           | || |:  |  :   ||    :   ||  : | :|||  |: |:|| | ::   | |
Db     762 gesswyndgcalelasslphtalsheglfhayfpfikveasyihqdsfkernttlvrsfd 821

Qy     822 IGRLLNLSIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGN 881
           | |:|:|:|:|  | :    :  :|: :  :|:|||| ||  |  |:::  |||  | |
Db     822 sgdlinvsvpigitferfsrnerasyeatviyvadvyrknpdcttallinntswkttgtn 881

Qy     882 LSRQAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
           ||||| : |    | :: | |:  : :||:|||||:|| |:| | :|
Db     882 lsrqagigragifyafspnlevtsnlsmeirgssrsynadlggkfqf 928


RESULT   9
AAY90239
ID   AAY90239 standard; Protein; 928 AA.
XX
AC   AAY90239;
XX
DT   29-AUG-2000  (first entry)
XX
DE   Chlamydia antigen CPN100638.
XX
KW   Chlamydia antigen; diagnosis; infection; community acquired pneumonia;
KW   therapy; upper respiratory tract disease; bronchitis; sinusitis;
KW   asthmatic bronchitis; adult-onset asthma; acute exacerbations of asthma.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO200032794-A2.
XX
PD   08-JUN-2000.
XX
PF   01-DEC-1999;   99WO-CA01147.
XX
PR   01-DEC-1998;   98US-0110339.
PR   01-DEC-1998;   98US-0110340.
PR   01-DEC-1998;   98US-0110427.
PR   01-DEC-1998;   98US-0110428.
PR   01-DEC-1998;   98US-0110438.
XX
PA   (CONN-) CONNAUGHT LAB LTD.
XX
PI   Murdin AD,  Oomen RP,  Wang J;
XX
DR   WPI; 2000-412339/35.
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DR   N-PSDB; AAA30851, AAA30852.
XX
PT   Nucleic acids encoding polypeptide antigens from Chlamydia useful for
PT   preventing, diagnosing and treating diseases such as community acquired
PT   pneumonia, bronchitis, sinusitis and asthmatic bronchitis, adult-onset
PT   asthma -
XX
PS   Claim 16; Fig 5; 174pp; English.
XX
CC   This sequence is a Chlamydia antigen of the invention, designated
CC   CPN100638. The nucleic acids (and their complementary sequences) may be
CC   used as diagnostic agents for detecting the presence of nucleic acids
CC   encoding Chlamydia antigens in samples according to standard methods,
CC   and therefore, for diagnosing Chlamydia infections. For example, they may
CC   be used as primers and probes for diagnostic polymerase chain reaction
CC   (PCR) assays. Antisense sequences may be used to down regulate
CC   expression of the proteins and may be used to treat infections. The
CC   nucleic acids may also be used to produce the protein antigens they
CC   encode according to standard recombinant DNA methodologies. The
CC   proteins may then be used as antigens for the production of antibodies
CC   (i.e. as vaccines) for preventing infection by Chlamydia. The
CC   antibodies may also be used as diagnostic reagents for detecting
CC   infections. Chlamydia is a pathogen implicated in the development of
CC   (for example) community acquired pneumonia, upper respiratory tract
CC   disease (especially bronchitis and sinusitis, asthmatic bronchitis,
CC   adult-onset asthma and acute exacerbations of asthma in adults.
XX
SQ   Sequence   928 AA;


  Query Match             37.4%;  Score 1787;  DB 21;  Length 928;
  Best Local Similarity   42.7%;  Pred. No. 3.8e-112;
  Matches  404;  Conservative  151;  Mismatches  354;  Indels   38;  Gaps   17;

Qy       1 MKTSIPWVLVSSVLAFSCHLQ----SLANEELLSPDDSFNGNIDSGTFTP-----KTSAT 51
Db       1 mksslhwflissslalplslnfsafaavveinlgptnsfsg---pgtytppaqttnadgt 57

Qy      52 TYSLTGDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTAN 111
Db      58 iynltgdvsitnagsptaltascfkettgnlsfqghgyqfllqnidaganc-tftntaan 116

Qy     112 KNLTFSGFSLLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGAS 171
Db     117 kllsfsgfsylsl--iqttnattgtgaikstgacsiqsnyscyfgqnfsndnggalqgss 174

Qy     172 FLLTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSI 231
Db     175 isls-lnpnltfaknkatqkggalystggitinntlnsasfsentaannggaiyteassf 233

Qy     232 LSNNKFLYFEGN---AAKTTGGAI-CNTKASGSPELIISNNKTLIFASNVAETSGGAIHA 287
Db     234 issnkaisfinnsvtatsatggaiycsstsapkpvltlsdngelnfigntaitsggaiyt 293

Qy     288 KKLALSSGGFTEFLRNN-VSSATPKGGAISIDASGELSLSAETGNITFVRNTLTT-TGST 345
Db     294 dnlvlssggptlfknnsgydtaaplggaiaiadsgslslsalggditfegntvvkgasss 353

Qy     346 DTPKRNAINIG-SNGKFTELRAAKNHTIFFYDPITSEGTS--SDVLKINNGSAGALNPYQ 402
Db     354 qtttrnsinigntnakivqlrasqgntiyfydpittsitaalsdalnlngpdlagnpayq 413

Qy     403 GTILFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMD 462
Db     414 gtivfsgeklseaeaaeadnlkstiqqpltlaggqlslksgvtlvaksfsqspgstllmd 473

Qy     463 SGTTLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESH 522
Db     474 agttletadg-itinnlvlnvdslketkkgtlkatqasqtvtlsgslslvdpsgnvyedv 532

Qy     523 MFSHDQLFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKE 582
Db     533 swnnpqvfscltlt--addpanihitdlaadpleknpihwgyqgnwalswqedtatkska 590

Qy     583 ATATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNF 642
Db     591 atltwtktgynpnperrgtlvantlwgsfvdvrsiqqlvatkvrqsqetrgiwcegisnf 650

Qy     643 LHKTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGT 702
Db     651 fhkdstkinkgfrhisagyvvgatttlasdnlitaafcqlfgkdrdhfinknrasayaas 710

Qy     703 LFFKHSHTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPE 762
Db     711 lhlqhlatlsspslLry--lpgses-------eqpvlfdaqisyiysknTmktyytqapk 761

Qy     763 SEGSWSNECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSD-GRGFS 821
Db     762 gesswyndgcalelasslphtalsheglfhayfpfikveasyihqdsfkernttlvrsfd 821

Qy     822 IGRLLNLSIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGN 881
Db     822 sgdlinvsvpigitferfsrnerasyeatviyvadvyrknpdcttallinntswkttgtn 881

Qy     882 LSRQAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
Db     882 lsrqagigragifyafspnlevtsnlsmeirgssrsynadlggkfqf 928


RESULT  10
AAW88418
ID   AAW88418 standard; Protein; 928 AA.
XX
AC   AAW88418;
XX
DT   26-APR-1999  (first entry)
XX
DE   Chlamydia pneumoniae surface exposed protein Omp5.
XX
KW   Omp5; outer membrane protein 5; surface exposed protein; antigen;
KW   infection; diagnosis; vaccine; atherosclerosis; asthma.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO9858953-A2.
XX
PD   30-DEC-1998.
XX
PF   19-JUN-1998;   98WO-DK00266.
XX
PR   23-JUN-1997;   97DK-0000744.
XX
PA   (BIRK/) BIRKELUND S.
PA   (CHRI/) CHRISTIANSEN G.
XX
PI   Birkelund S,  Christiansen G,  Knudsen K,  Madsen A;
PI   Mygind P;
XX
DR   WPI; 1999-105610/09.
DR   N-PSDB; AAX06817.
XX
PT   Species-specific test for identifying mammals infected with
PT   Chlamydia pneumoniae - comprises detecting antibodies specific for
PT   outer membrane proteins of C. pneumoniae or nucleic acids encoding
PT   these proteins
XX
PS   Claim 7; Page 43-45; 115pp; English.
XX
CC   This polypeptide comprises the novel 97.2 kDa surface exposed
CC   protein Omp5 of the human respiratory pathogen Chlamydia
CC   pneumoniae.  Its amino acid sequence was deduced from DNA (see
CC   AAX06817) isolated from a C. pneumoniae expression library.  The
CC   invention provides 12 novel surface exposed proteins, Omp4-Omp15
CC   (see AAW88417-28), and nucleic acid sequences encoding them (see
CC   AAX06816-27).  A new species specific test is claimed that is used
CC   to identify mammals (including humans) infected with Chlamydia
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CC   pneumoniae.  The test comprises detecting antibodies specific for
CC   Omp4-Omp15 or detecting nucleic acid fragments encoding these outer
CC   membrane proteins, especially by PCR.  The proteins are also used
CC   in the diagnosis of C. pneumoniae infection in mammals.  The
CC   nucleic acids and proteins can also be used in the immunization of
CC   mammals, the nucleic acids being particularly useful as DNA
CC   vaccines for effecting in vivo expression of antigens.  The
CC   vaccines may also prevent atherosclerosis and bronchial asthma,
CC   which are possibly associated with C. pneumoniae.
XX
SQ   Sequence   928 AA;


  Query Match             37.3%;  Score 1785;  DB 20;  Length 928;
  Best Local Similarity   40.4%;  Pred. No. 5.1e-112;
  Matches  385;  Conservative  173;  Mismatches  344;  Indels   52;  Gaps   18;

Qy       1 MKTSIPWVLVSSVLA--FSCHLQSLANEELLSPDDSFNGNIDSGTFTPKTSAT--TYSLT 56
           ||:   |:::|| ||   ||     |  | : | |||:|: ::||:||| : |   |:||
Db       1 mksqfswlvlsstlacftscstvfaataenigpsdsfdgstntgtytpknttt gidytlt 60

Qy      57 GDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANKNLTF 116
           ||:     |    |:  ||  ||::|:| | |:||:|  | :    ||| | | :|||:
Db      61 gditlqnlgdsaaltkgcfsdtteslsfagkgyslsflnikssae-gaalsvttdknlsl 119

Qy     117 SGFSLLSFDSSPSTTVTT--GQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGASFLL 174
           :||| |:| ::||: :||  |:| :   | :  :|   ::   ::   :||||   :  |
Db     120 tgfssltflaapssvittpsgkgavkcggdltfdnngtilfkqdyceenggaistknlsl 179

Qy     175 TGTSGDALFSNNSSST---KGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSI 231
             ::|   |  | ||    |||||  |    | |||    | :|||  :||||:  |
Db     180 knstgsisfegnkssatgkkggaicatgtvditnntaptlfsnniaeaaggainstgnct 239

Qy     232 LSNNKFLYFEGNAAKTT---GGAICNTKASGSPELIISNNKTLIFASNVAETSGGAIHAK 288
           :: |  | |  |:   |   |||:     ||  :: || |::: |: | |  :||||:||
Db     240 itgntslvfsensvtatagnggal-----sgdadvtisgnqsvtfsgnqavanggaiyak 294

Qy     289 KLALSS--GGFTEFLRNNVSSATP-KGGAISIDASGELSLSAETGNITFVRNTLTTTGST 345
           || |:|  ||   |  | |   |   ||||||  |:|| ||||| |:||| |  | :  | :
Db     295 kltlasgggggisfsnnivqgttagnggaisilaagecslsaeagditfngnaivat-tp 353

Qy     346 DTPKRNAINIGSNGKFTELRAAKNHTIFFYDPITSE--GTSSDVLKINNGSAGALNPYQG 403
             | |||:|:|||  | | |||   |:|||||||||:     |:| | :|   ||    | |
Db     354 qttkrnsidigstakitnlraisghsiffydpitantaadstdtlnlnkadagnstdysg 413

Qy     404 TILFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDS 463
           :|:|||| |: || |||||| |:  |||:|: | |:|::|||||::  |:| ||| : ||:
Db     414 sivfsgeklsedeakvadnltstlkqpvtltagnlvlkrgvtldtkgftqtagssvimda 473

Qy     464 GTTLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHM 523
           ||||  :   :|:| | | |||||  : | : |  ||  | :|| : |:| :|| ||:|
Db     474 gttlkasteevtltglsipvdslgegkkvviaasaasknvalsgpillldnqgnayenhd 533

Qy     524 FSHDQLFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTAT--NTK 581
             | || ::::      |  |: :  ||     : ||:|| | : |  |||:   ||
Db     534 lgktqdfsfvqlsa-lgtatttdvpa---vptvatpthygyqgtwgmtwvddtastpktk 589

Qy     582 EATATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTN 641
             ||  || ||::|:|||:  || |:||| |:||:::| ::|  |  :   :||| : : |
Db     590 tatlawtntgylpnperqgplvpnslwgsfsdiqaiqgviersaltlcsdrgfwaagvan 649

Qy     642 FLHKTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGG 701
           || |     :: :|| |||| |||:| |  ::| :|||| ||  |||  :| |:: || |
Db     650 fldkdkkgekrkyrhksggyaiggaaqtcsenlisfafcqlfgsdkdflvaknhtdtyag 709

Qy     702 TLFFKHSHTLQPQNYLRLGRAKFSESAIEKFP---REIPLALDVQVSFSHSDNRMETHYT 758
             : :|               : |    ::| |      || |: |:::||  | ::| ||
Db     710 afyiqhitec----------sgfigclldklpgswshkplvlegqlayshvsndlktkyt 759

Qy     759 SLPESEGSWSNECIAGGIGLDLPFVLSNPHP----LFKTFIPQMKVEMVYVSQNSFFESS 814
           : || :||| |      :|      |: :|     | |: | :|: : |: |:|| |
Db     760 aypevkgswgnnafnmmlgas-----shsypeylhcfdtyapyiklnltyirqdsfsekg 814

Qy     815 SDGRGFSIGRLLNLSIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDS 874
           ::|| |    | |||:|:| || :    : ::|||:  :| |: ||:|: |  ||:|  |
Db     815 tegrsfddsnlfnlslpigvkfekfsdcndfsydltlsyvpdlirndpkcttalvisgas 874

Qy     875 WKIRGGNLSRQAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
           |:    ||:||| :|  ::| ::   |: | :  |:||||| ||||:| | :|
Db     875 wetyannlarqalqvragshyafspmfevlgqfvfevrgssriynvdlggkfqf 928


RESULT  11
AAY35052
ID   AAY35052 standard; Protein; 930 AA.
XX
AC   AAY35052;
XX
DT   13-SEP-1999  (first entry)
XX
DE   Chlamydia pneumoniae surface exposed polypeptide.
XX
KW   Respiratory disease; pneumonia; bronchitis; heart disease; sarcoidosis;
KW   sinusitis; purulent otitis media; erythema nodosum; pharyngitis;
KW   vaccine; neutralising epitope.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO9927105-A2.
XX
PD   03-JUN-1999.
XX
PF   20-NOV-1998;   98WO-IB01890.
XX
PR   04-NOV-1998;   98US-0107078.
PR   21-NOV-1997;   97FR-0014673.
XX
PA   (GEST ) GENSET.
XX
PI   Griffais R;
XX
DR   WPI; 1999-357842/30.
XX
PT   Genome sequence of Chlamydia pneumoniae
XX
PS   Page 940-942; Disclosure; 1912pp; English.
XX
CC   AAY34584-Y35879 represent the proteins encoded by all the open reading
CC   frames in the complete genome (see AAX91990) of Chlamydia pneumoniae.
CC   C. pneumoniae causes respiratory disease such as pneumonia and
CC   bronchitis and is thought to be a contributing factor in heart
CC   disease, sarcoidosis, sinusitis, purulent otitis media, erythema
CC   nodosum or pharyngitis. The polypeptides encoded by the open reading
CC   frames of the C. pneumoniae genome (see AAY34584-Y35879) can be used in
CC   immunogenic compositions as vaccines. Vectors containing C. pneumoniae
CC   nucleotides sequences can also be used as immunogenic compositions,
CC   especially where the vector directs the expression of a neutralising
CC   epitope of C. pneumoniae.
XX
SQ   Sequence   930 AA;


  Query Match             36.9%;  Score 1763;  DB 20;  Length 930;
  Best Local Similarity   41.7%;  Pred. No. 1.6e-110;
  Matches  394;  Conservative  165;  Mismatches  355;  Indels   30;  Gaps   14;

Qy       1 MKTSIPWVLVSSVLAFSCHLQSLAN---EELLSPDDSFNGNIDSGTFTPKTSA----TTY 53
           ||  :  :|:|| |      | |:|    :  ||| |||:|     |||||::|    | |
Db       1 mkiplhkllisstlvtpi-llsiatygadaslsptdsfdg-aggstftpkstadangtny 58

Qy      54 SLTGDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANKN 113
             |:|:|:  : |||| |:  || :|| :||| | |:| :|  :|||::|||||||||:|
Db      59 vlsgnvyindagkgtaltgccftettgdltftgkgysfsfntvdagsnagaaasttadka 118

Qy     114 LTFSGFSLLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTA---DGGAIKGA 170
           |||:||| ||| ::| ||| :|: |||||| :|| :   :: : | |      :||||
```

```
Db    119 ltftgfsnlsfiaapgttvasgkstlssagalnltdngtilfsqnvsneannnggaitak 178

Qy    171 SFLLTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTS 230

Db    179 tlsisgntssitftsnsakklggaiyssaaasisgntgqlvfmnnkgetgggalgfeass 238

Qy    231 ILSNNKFLYFEGNAAKTT---GGAICNTKASGSPELIISNNKTLIFASNVAETSGGAIHA 287

Db    239 sitqnsslffsgntatdaagkggaiycektgetptltisgnksltfaenssvtqggaica 298

Qy    288 KKLALSSGGFTEFLRNNV-SSATPKGGAISIDASGELSLSAETGNITFVRNTLTTTGSTD 346

Db    299 hgldlsaagptlfsnnrcgntaagkggaiaiadsgslslsanqgditflgntltst-sap 357

Qy    347 TPKRNAINIGSNGKFTELRAAKNHTIFFYDPITSEGT-SSDVLKINNGSAGALNPYQGTI 405

Db    358 tstrnaiylgssakitnlraaqgqsiyfydpiasnttgasdvltinqpdsnspldysgti 417

Qy    406 LFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDSGT 465

Db    418 vfsgeklsadeakaadnftsilkqplalasgtlalkgnveldvngftqtegstllmqpgt 477

Qy    466 TLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHMFS 525

Db    478 klkadteaisltklvvdlsalegnksvsietaganktitltsplvfqdssgnfyeshti- 536

Qy    526 HDQLFSL-LKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKEAT 584

Db    537 -nqaftqplvvftaataasdiyidalltspvqtpephygyqghweatw-adtst-aksgt 593

Qy    585 ATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNFLH 644

Db    594 mtwvttgynpnperrasvvpdslwasftdirtlqqimtsqansiyqqrglwasgtanffh 653

Qy    645 KTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGTLF 704

Db    654 kdksgtnqafrhksygyivggsaedfsenifsvafcqlfgkdkdlfiventshnylasly 713

Qy    705 FKHSHTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPESE 764

Db    714 lqhraflg-------glpmpsfgsitdmlkdiplilnaqlsysytkndmdtrytsypeaq 766

Qy    765 GSWSNECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGFSIGR 824

Db    767 gswtnnsgalelggslalylpkeapffqgyfpflkfqavysrqqnfkesgaearafddgd 826

Qy    825 LLNLSIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGNLSR 884

Db    827 lvncsipvgirlekisedeknnfeislayigdvyrknprsrtslmvsgaswtslcknlar 886

Qy    885 QAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928

Db    887 qaflasagshltlsphvelsgeaayelrgsahiynvdcglrysf 930


RESULT 12
AAY35054
ID   AAY35054 standard; Protein; 927 AA.
XX
AC   AAY35054;
XX
DT   13-SEP-1999  (first entry)
XX
DE   Chlamydia pneumoniae surface exposed polypeptide.
XX
KW   Respiratory disease; pneumonia; bronchitis; heart disease; sarcoidosis;
KW   sinusitis; purulent otitis media; erythema nodosum; pharyngitis;
KW   vaccine; neutralising epitope.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO9927105-A2.
XX
PD   03-JUN-1999.
XX
PF   20-NOV-1998;   98WO-IB01890.
XX
PR   04-NOV-1998;   98US-0107078.
PR   21-NOV-1997;   97FR-0014673.
XX
PA   (GEST ) GENSET.
XX
PI   Griffais R;
XX
DR   WPI; 1999-357842/30.
XX
PT   Genome sequence of Chlamydia pneumoniae
XX
PS   Page 942-944; Disclosure; 1912pp; English.
XX
CC   AAY34584-Y35879 represent the proteins encoded by all the open reading
CC   frames in the complete genome (see AAX91990) of Chlamydia pneumoniae.
CC   C. pneumoniae causes respiratory disease such as pneumonia and
CC   bronchitis and is thought to be a contributing factor in heart
CC   disease, sarcoidosis, sinusitis, purulent otitis media, erythema
CC   nodosum or pharyngitis. The polypeptides encoded by the open reading
CC   frames of the C. pneumoniae genome (see AAY34584-Y35879) can be used in
CC   immunogenic compositions as vaccines. Vectors containing C. pneumoniae
CC   nucleotides sequences can also be used as immunogenic compositions,
CC   especially where the vector directs the expression of a neutralising
CC   epitope of C. pneumoniae.
XX
SQ   Sequence   927 AA;


  Query Match             36.8%;  Score 1758.5;  DB 20;  Length 927;
  Best Local Similarity   42.0%;  Pred. No. 3.1e-110;
  Matches  398;  Conservative  153;  Mismatches  357;  Indels   39;  Gaps   17;

Qy      1 MKTSIPWVLVSSVLAFSCHLQ----SLANEELLSPDDSFNGNIDSGTFTP-----KTSAT 51

Db      1 mksslhwflissslalplslnfsafaavveinlgptnsfsg---pgtytppaqttnadgt 57

Qy     52 TYSLTGDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTAN 111

Db     58 iynltgdvsitnagsptaltascfkettgnlsfqghgyqfllqnidaganc-tftntaan 116

Qy    112 KNLTFSGFSLLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGAS 171

Db    117 kllsfsgfsylsl--iqttnattgtgaikstgacsiqsnyscyfgqnfsndnggalqgss 174

Qy    172 FLLTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSI 231

Db    175 isls-lnpnltfaknkatqkggalystggitinntlnsasfsentaannggaiyteassf 233

Qy    232 LSNNKFLYFEGN---AAKTTGGAI-CNTKASGSPELIISNNKTLIFASNVAETSGGAIHA 287

Db    234 issnkaisfinnsvtatsatggaiycsstsapkpvltlsdngelnfigntaitsggaiyt 293

Qy    288 KKLALSSGGFTEFLRNN-VSSATPKGGAISIDASGELSLSAETGNITFVRNTLTT-TGST 345

Db    294 dnlvlssggptlfknnsaidtaaplggaiaiadsgslslsalggditfegntvvkgasss 353

Qy    346 DTPKRNAINIG-SNGKFTELRAAKNHTIFFYDPITSEGTS--SDVLKINNGSAGALNPYQ 402

Db    354 qtttrnsinigntnakivqlrasqgntiyfydpittsitaalsdalnlngpdlagnpayq 413

Qy    403 GTILFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMD 462

Db    414 gtivfsgeklseaeaaeadnlkstiqqpltlaggqlslksgvtlvaksfsqspgstllmd 473

Qy    463 SGTTLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESH 522

Db    474 agttletadgslsi--icsqcrflkrdqextlkatqasqtvtlsgslslvdpsgnvyedv 531

Qy    523 MFSHDQLFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKE 582
```

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          ::: |:|| | :|  ||   |: |: |   | |     :|:|| | ::|  |||| :|
Db    532 swnnpqvfscltlt--addpanihitdlaadpleknpihwgyqgnwalswqedtatkska 589

Qy    583 ATATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNF 642
          || ||||||: |:|||:  || ||||| | |:||:||||       :  :| |   ::||
Db    590 atltwtktgynpnperrgtlvantlwgsfvdvrsiqqlvatkvrqsqetrgiwcegisnf 649

Qy    643 LHKTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGT 702
          ||   :  ||||| | |||:| :     |:| | ||| || :|:| ||  | :  |  :
Db    650 fhkdstkinkgfrhisagyvvgatttlasdnlitaafcqlfgkdrdhfinknrasayaas 709

Qy    703 LFFKHSHTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPE 762
          |  :|  ||   : ||     |||       | |:  | |:|: :| | |:|:||  |:
Db    710 lhlqhlatlsspsllry--lpgses-------eqpvlfdaqisyiysknmktyytqapk 760

Qy    763 SEGSWSNECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSD-GRGFS 821
          | || |:  |  :   ||    :   ||  : | :|||  |: |:|| | ::   | |
Db    761 gesswyndgcalelasslphtalsheglfhayfpfikveasyihqdsfkernttlvrsfd 820

Qy    822 IGRLLNLSIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGN 881
          | |:|:|:|:|  | :    :  :|: :  :|:|||| ||  |  |:::  |||  | |
Db    821 sgdlinvsvpigitferfsrnerasyeatviyvadvyrknpdcttallinntswkttgtn 880

Qy    882 LSRQAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
          ||||| : |    | :: | |:  : :||:|||||:|| |:| | :|
Db    881 lsrqagigragifyafspnlevtsnlsmeirgssrsynadlggkfqf 927


RESULT 13
AAY90237
ID   AAY90237 standard; Protein; 928 AA.
XX
AC   AAY90237;
XX
DT   29-AUG-2000  (first entry)
XX
DE   Chlamydia antigen CPN100635.
XX
KW   Chlamydia antigen; diagnosis; infection; community acquired pneumonia;
KW   therapy; upper respiratory tract disease; bronchitis; sinusitis;
KW   asthmatic bronchitis; adult-onset asthma; acute exacerbations of asthma.
XX
OS   Chlamydia pneumoniae.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..43
FT                   /note= "signal peptide"
FT   Protein         44..928
FT                   /note= "mature CPN100635"
XX
PN   WO200032794-A2.
XX
PD   08-JUN-2000.
XX
PF   01-DEC-1999;   99WO-CA01147.
XX
PR   01-DEC-1998;   98US-0110339.
PR   01-DEC-1998;   98US-0110340.
PR   01-DEC-1998;   98US-0110427.
PR   01-DEC-1998;   98US-0110428.
PR   01-DEC-1998;   98US-0110438.
XX
PA   (CONN-) CONNAUGHT LAB LTD.
XX
PI   Murdin AD,  Oomen RP,  Wang J;
XX
DR   WPI; 2000-412339/35.
DR   N-PSDB; AAA30849, AAA30850.
XX
PT   Nucleic acids encoding polypeptide antigens from Chlamydia useful for
PT   preventing, diagnosing and treating diseases such as community acquired
PT   pneumonia, bronchitis, sinusitis and asthmatic bronchitis, adult-onset
PT   asthma -
XX
PS   Claim 16; Fig 3; 174pp; English.
XX
CC   This sequence is a Chlamydia antigen of the invention, designated
CC   CPN100635. The nucleic acids (and their complementary sequences) may be
CC   used as diagnostic agents for detecting the presence of nucleic acids
CC   encoding Chlamydia antigens in samples according to standard methods,
CC   and therefore, for diagnosing Chlamydia infections. For example, they may
CC   be used as primers and probes for diagnostic polymerase chain reaction
CC   (PCR) assays. Antisense sequences may be used to down regulate
CC   expression of the proteins and may be used to treat infections. The
CC   nucleic acids may also be used to produce the protein antigens they
CC   encode according to standard recombinant DNA methodologies. The
CC   proteins may then be used as antigens for the production of antibodies
CC   (i.e. as vaccines) for preventing infection by Chlamydia. The
CC   antibodies may also be used as diagnostic reagents for detecting
CC   infections. Chlamydia is a pathogen implicated in the development of
CC   (for example) community acquired pneumonia, upper respiratory tract
CC   disease (especially bronchitis and sinusitis, asthmatic bronchitis,
CC   adult-onset asthma and acute exacerbations of asthma in adults.
XX
SQ   Sequence   928 AA;


  Query Match             36.7%;  Score 1757;  DB 21;  Length 928;
  Best Local Similarity   39.9%;  Pred. No. 4e-110;
  Matches  381;  Conservative  174;  Mismatches  347;  Indels   52;  Gaps   18;

Qy      1 MKTSIPWVLVSSVLA--FSCHLQSLANEELLSPDDSFNGNIDSGTFTPKTSAT--TYSLT 56
            ||:   |:::|| ||   ||      |  | : | |||:|: ::||:||| : |   |:||
Db      1 mksqfswlvlsstlacftscstvfaataenigpsdsfdgstntgtytpkntttgidytlt 60

Qy     57 GDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANKNLTF 116
          ||:     |    |:  ||  ||::|:| | |:||:|  | :    ||| | | :|||:
Db     61 gditlqnlgdsaaltkgcfsdtteslsfagkgyslsflnikssae-gaalsvttdknlsl 119

Qy    117 SGFSLLSFDSSPSTTVTT--GQGTLSSAGGVNLENIRKLVVAGNFSTADGGAIKGASFLL 174
          :||| |:| ::||: :||  |:| :   | : :|   ::   ::   :||||   :  |
Db    120 tgfssltflaapssvittpsgkgavkcggdltfdnngtilfkqdyceenggaistknlsl 179

Qy    175 TGTSGDALFSNNSSST---KGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTSI 231
            ::|   |  | ||    |||||  |    | |||    | :|||  :||||:  |
Db    180 knstgsisfegnkssatgkkggaicatgtvditnntaptlfsnniaeaaggainstgnct 239

Qy    232 LSNNKFLYFEGNAAKTT---GGAICNTKASGSPELIISNNKTLIFASNVAETSGGAIHAK 288
          :: |  | |  |:   |   |||:     ||  :: || |::: |: | |  :||||:||
Db    240 itgntslvfsensvtatagnggal-----sgdadvtisgnqsvtfsgnqavanggaiyak 294

Qy    289 KLALSS--GGFTEFLRNNVSSATP-KGGAISIDASGELSLSAETGNITFVRNTLTTTGST 345
          || |:|  ||   |  | |   |  ||||||  |:|| || :| |:    | :  | :
Db    295 kltlasggggnpfsnnivqgttagnggaisilaagecslfseagdhylngnaivat-tp 353

Qy    346 DTPKRNAINIGSNGKFTELRAAKNHTIFFYDPITSE--GTSSDVLKINNGSAGALNPYQG 403
          | |||:|:||| ||  ||||   |:|||||||:     |:| | :|   ||    | |
Db    354 qttkrnsidigstgkdhelraisghsiffydpitantaadstdtlnlnkadagnstdysg 413

Qy    404 TILFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDS 463
          :|:|||| |: || |||||| |:  |||:|: | |:|::||||::  |:| ||| : ||:
Db    414 sivfsgeklsedeakvadnltstlkqpvtltagnlvlkrgvtldtkgftqtagssvimda 473

Qy    464 GTTLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHM 523
          |||| :  :|:| | | |||||  : | : |  ||  | :|| : |:| :|| ||:|
Db    474 gttlkasteevtltglsipvdslgegkkvviaasaasknvalsgpillldnqgnayenhd 533

Qy    524 FSHDQLFSLLKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTAT--NTK 581
            | || ::::      |  |: :   ||     : ||:|| | : |  |||:   ||
Db    534 lgktqdfsfvqlsa-lgtatttdvpa---vptvatpthygyqgtwgmtwvddtastpktk 589

Qy    582 EATATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTN 641
          ||  || ||::|:|||:  || |:||| |:||:::| ::|  |  :   :||| : : |
Db    590 tatlawtntgylpnpergqplvpnslwgsfsdiqaiqgviersaltlcsdrgfwaagvan 649

Qy    642 FLHKTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGG 701
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          || |     :: :|| |||| |||:| |  ::| :|||| ||  |||  :| |:: || |
Db    650 fldkdkkgekrkyrhksggyaiggaaqtcsenlisfafcqlfgsdkdflvaknhtdtyag 709

Qy    702 TLFFKHSHTLQPQNYLRLGRAKFSESAIEKFP---REIPLALDVQVSFSHSDNRMETHYT 758
          : :|              : |    ::| |      || |: |:::||  | ::| ||
Db    710 afyiqhitec----------sgfigclldklpgswshkplvlegqlayshvsndlktkyt 759

Qy    759 SLPESEGSWSNECIAGGIGLDLPFVLSNPHP----LFKTFIPQMKVEMVYVSQNSFFESS 814
          : || :||| |      :|       |: :|     | |: | :|: : |: |:|| |
Db    760 aypevkgswgnnafnmmlgas-----shsypeylhcfdtyapyiklnltyirqdsfsekg 814

Qy    815 SDGRGFSIGRLLNLSIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDS 874
          ::|| |    | |||:|:| || :    : ::|||:  :| |: ||:|: |  ||:|  |
Db    815 tegrsfddsnlfnlslpigvkfekfsdcndfsydltlsyvpdlirndpkcttalvisgas 874

Qy    875 WKIRGGNLSRQAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
          |:    ||:||| :|  ::| ::   |: | :  |:||||| ||||:| | :|
Db    875 wetyannlarqalqvragshyafspmfevlgqfvfevrgssriynvdlggkfqf 928
```

RESULT 14
AAW88424
ID AAW88424 standard; Protein; 930 AA.
XX
AC AAW88424;
XX
DT 26-APR-1999 (first entry)
XX
DE Chlamydia pneumoniae surface exposed protein Omp11.
XX
KW Omp11; outer membrane protein 11; surface exposed protein;
KW antigen; infection; diagnosis; vaccine; atherosclerosis; asthma.
XX
OS Chlamydia pneumoniae.
XX
PN WO9858953-A2.
XX
PD 30-DEC-1998.
XX
PF 19-JUN-1998; 98WO-DK00266.
XX
PR 23-JUN-1997; 97DK-0000744.
XX
PA (BIRK/) BIRKELUND S.
PA (CHRI/) CHRISTIANSEN G.
XX
PI Birkelund S, Christiansen G, Knudsen K, Madsen A;
PI Mygind P;
XX
DR WPI; 1999-105610/09.
DR N-PSDB; AAX06823.
XX
PT Species-specific test for identifying mammals infected with
PT Chlamydia pneumoniae - comprises detecting antibodies specific for
PT outer membrane proteins of C. pneumoniae or nucleic acids encoding
PT these proteins
XX
PS Claim 7; Page 63-65; 115pp; English.
XX
CC This polypeptide comprises the novel 97.6 kDa surface exposed
CC protein Omp11 of the human respiratory pathogen Chlamydia
CC pneumoniae. Its amino acid sequence was deduced from DNA (see
CC AAX06823) isolated from a C. pneumoniae expression library. The
CC invention provides 12 novel surface exposed proteins, Omp4-Omp15
CC (see AAW88417-28), and nucleic acid sequences encoding them (see
CC AAX06816-27). A new species specific test is claimed that is used
CC to identify mammals (including humans) infected with Chlamydia
CC pneumoniae. The test comprises detecting antibodies specific for
CC Omp4-Omp15 or detecting nucleic acid fragments encoding these outer
CC membrane proteins, especially by PCR. The proteins are also used
CC in the diagnosis of C. pneumoniae infection in mammals. The
CC nucleic acids and proteins can also be used in the immunization of
CC mammals, the nucleic acids being particularly useful as DNA
CC vaccines for effecting in vivo expression of antigens. The
CC vaccines may also prevent atherosclerosis and bronchial asthma,
CC which are possibly associated with C. pneumoniae.
XX
SQ Sequence 930 AA;

Query Match 36.7%; Score 1755; DB 20; Length 930;
Best Local Similarity 41.7%; Pred. No. 5.4e-110;
Matches 394; Conservative 164; Mismatches 356; Indels 30; Gaps 14;

```
Qy      1 MKTSIPWVLVSSVLAFSCHLQSLAN---EELLSPDDSFNGNIDSGTFTPKTSA----TTY 53
            ||  :  :|:|| |      | |:|    :  ||| |||:|     |||||::|    | |
Db      1 mkiplhkllisstlvtpi-llsiatygadaslsptdsfdg-aggstftpkstadangtny 58

Qy     54 SLTGDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANKN 113
           |:|:|:  : |||| |:  || :|| :||| | |:| :|  :|||::||||||||||:|
Db     59 vlsgnvyindagkgtaltgccftettgdltftgkgysfsfntvdagsnagaaasttadka 118

Qy    114 LTFSGFSLLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTA---DGGAIKGA 170
          |||:||| ||| ::| ||| :|: |||||| :|| :   :: : | |     :||||
Db    119 ltftgfsnlsfiaapgttvasgkstlssagalnltdngtilfsqnvsneannnggaittk 178

Qy    171 SFLLTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTS 230
          :  ::| :    |::||:   |||| ::| | |: ||| : |::|   | |||:  | :|
Db    179 tlsisgntssitftsnsakklggaiyssaaasisgntgqlvfmnnkgetgggalgfeass 238

Qy    231 ILSNNKFLYFEGNAAKTT---GGAICNTKASGSPELIISNNKTLIFASNVAETSGGAIHA 287
          :: |  |:| || |       ||||  :|   :| | || ||:| || | : | |||| |
Db    239 sitqnsslffsgntatdaagkggaiycektgetptltisgnksltfaenssvtqggaica 298

Qy    288 KKLALSSGGFTEFLRNNV-SSATPKGGAISIDASGELSLSAETGNITFVRNTLTTTGSTD 346
            | ||: | | |  |   ::|  |||||:|  || |||||  |:|||: ||||:| |
Db    299 hgldlsaagptlfsnnrcgntaagkggaiaiadsgslslsanqgditflgntltst-sap 357

Qy    347 TPKRNAINIGSNGKFTELRAAKNHTIFFYDPITSEGT-SSDVLKINNGSAGALNPYQGTI 405
          |  |||| :||: | | ||||:  :|:|||||  |  | :|||| ||   : :   | |||
Db    358 tstrnaiylgssakitnlraaqgqsiyfydpiasnttgasdvltinqpdsnspldysgti 417

Qy    406 LFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDSGT 465
          :|||| |:||| | |||  |   ||::|: | | |:  | |:   |:|  || | |  ||
Db    418 vfsgeklsadeakaadnftsilkqplalasgtlalkgnveldvngftqtegstllmqpgt 477

Qy    466 TLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHMFS 525
          |     :|::| | ::: :|   : ||:   ||:  : ::  |   |  || ||||
Db    478 klkadteaisltklvvdlsalegnksvsietaganktitltsplvfqdssgnfyeshti- 536

Qy    526 HDQLFSL-LKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKEAT 584
          :| |:  | :   |   ::: | :|:  | : |   ||:|| |   |  ||:|  |  |
Db    537 -nqaftqplvvftaataasdiyidalltspvqtpephygyqghweatw-adtst-aksgt 593

Qy    585 ATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNFLH 644
          ||  ||: |:|||:::::| ::||  |||||:|||::   |  :  ::| | |   || |
Db    594 mtwvttgynpnperrasvvpdslwasftdirtlqqimtsqansiyqqrglwasgtanffh 653

Qy    645 KTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGTLF 704
          |      : ||| | ||::|||||    :::|: ||| || :||| ||  | |  |' :|:
Db    654 kdksgtnqafrhksygyivggsaedfsenifsvafcqlfgkdkdlfiventshnylasly 713

Qy    705 FKHSHTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPESE 764
          :|   |        |    | :|    ::||| |: |:|:|:: | |:| ||| ||::
Db    714 lqhraflg-------glpmpsfgsitdmlkdiplilnaqlsysytkndmdtrytsypeaq 766

Qy    765 GSWSNECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGFSIGR 824
          |||:|   |  :|  |   |    | |: : | :| : ||  | :| || :: | |  |
Db    767 gswtnnsgalelggslalylpkeapffqgyfpflkfqavysrqqnfkesgaearafddgd 826

Qy    825 LLNLSIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGNLSR 884
          |:| ||||| :  :    :  :::|   : |||| ||:|  :|::|  ||     ||:|
Db    827 lvncsipvgirlekisedeknnfeislanigdvyrknprsrtslmvsgaswtslcknlar 886

Qy    885 QAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
          ||||    ::   : : || |  | |||||:  |||| | :  |
```

```
Db    887 qaflasagshltlsphvelsgeaayelrgsahiynvdcglrysf 930


RESULT 15
AAY90240
ID   AAY90240 standard; Protein; 930 AA.
XX
AC   AAY90240;
XX
DT   29-AUG-2000  (first entry)
XX
DE   Chlamydia antigen CPN100639.
XX
KW   Chlamydia antigen; diagnosis; infection; community acquired pneumonia;
KW   therapy; upper respiratory tract disease; bronchitis; sinusitis;
KW   asthmatic bronchitis; adult-onset asthma; acute exacerbations of asthma.
XX
OS   Chlamydia pneumoniae.
XX
PN   WO200032794-A2.
XX
PD   08-JUN-2000.
XX
PF   01-DEC-1999;   99WO-CA01147.
XX
PR   01-DEC-1998;   98US-0110339.
PR   01-DEC-1998;   98US-0110340.
PR   01-DEC-1998;   98US-0110427.
PR   01-DEC-1998;   98US-0110428.
PR   01-DEC-1998;   98US-0110438.
XX
PA   (CONN-) CONNAUGHT LAB LTD.
XX
PI   Murdin AD,  Oomen RP,  Wang J;
XX
DR   WPI; 2000-412339/35.
DR   N-PSDB; AAA30853, AAA30854.
XX
PT   Nucleic acids encoding polypeptide antigens from Chlamydia useful for
PT   preventing, diagnosing and treating diseases such as community acquired
PT   pneumonia, bronchitis, sinusitis and asthmatic bronchitis, adult-onset
PT   asthma -
XX
PS   Claim 16; Fig 7; 174pp; English.
XX
CC   This sequence is a Chlamydia antigen of the invention, designated
CC   CPN100639. The nucleic acids (and their complementary sequences) may be
CC   used as diagnostic agents for detecting the presence of nucleic acids
CC   encoding Chlamydia antigens in samples according to standard methods,
CC   and therefore, for diagnosing Chlamydia infections. For example, they may
CC   be used as primers and probes for diagnostic polymerase chain reaction
CC   (PCR) assays. Antisense sequences may be used to down regulate
CC   expression of the proteins and may be used to treat infections. The
CC   nucleic acids may also be used to produce the protein antigens they
CC   encode according to standard recombinant DNA methodologies. The
CC   proteins may then be used as antigens for the production of antibodies
CC   (i.e. as vaccines) for preventing infection by Chlamydia. The
CC   antibodies may also be used as diagnostic reagents for detecting
CC   infections. Chlamydia is a pathogen implicated in the development of
CC   (for example) community acquired pneumonia, upper respiratory tract
CC   disease (especially bronchitis and sinusitis, asthmatic bronchitis,
CC   adult-onset asthma and acute exacerbations of asthma in adults.
XX
SQ   Sequence   930 AA;


  Query Match             36.7%;  Score 1755;  DB 21;  Length 930;
  Best Local Similarity   41.6%;  Pred. No. 5.4e-110;
  Matches  393;  Conservative  165;  Mismatches  356;  Indels   30;  Gaps   14;

Qy      1 MKTSIPWVLVSSVLAFSCHLQSLAN---EELLSPDDSFNGNIDSGTFTPKTSA----TTY 53
          ||  :  :|:|| |     | |:|    :  ||| |||:|     |||||::|    | |
Db      1 mkiplhkllisstlvtpi-llsiatygadaslsptdsfdg-aggstftpkstadangtny 58

Qy     54 SLTGDVFFYEPGKGTPLSDSCFKQTTDNLTFLGNGHSLTFGFIDAGTHAGAAASTTANKN 113
           |:|:|:  : |||| |:  || :|| :||| | |:| :|  :|||::|||||||||:|
Db     59 vlsgnvyindagkgtaltgccftettgdltftgkgysfsfntvdagsnagaaasttadka 118

Qy    114 LTFSGFSLLSFDSSPSTTVTTGQGTLSSAGGVNLENIRKLVVAGNFSTA---DGGAIKGA 170
           | |:||| ||| ::| ||| :|: ||||||  :|| :   :: : | |     :||||
Db    119 liftgfsnlsfiaapgttvasgkstlssagalnltdngtilfsqnvsneannnggaittk 178

Qy    171 SFLLTGTSGDALFSNNSSSTKGGAIATTAGARIANNTGYVRFLSNIASTSGGAIDDEGTS 230
           :  ::| :    |::||:   |||| ::| | |: ||| : |::|   | |||:  | :|
Db    179 tlsisgntssitftsnsakklggaiyssaaasisgntgqlvfmnnkgetgggalgfeass 238

Qy    231 ILSNNKFLYFEGNAAKTT---GGAICNTKASGSPELIISNNKTLIFASNVAETSGGAIHA 287
           :: |  |:| || |       ||||   |   :| | || ||:| || | : | ||||
Db    239 sitqnsslffsgntatdaagkggaiycektgetptltisgnksltfaenssvtqggaica 298

Qy    288 KKLALSSGGFTEFLRNNV-SSATPKGGAISIDASGELSLSAETGNITFVRNTLTTTGSTD 346
            | ||: | | |  |   ::|  |||||:|  || |||||  |:|||: ||||:| |
Db    299 hgldlsaagptlfsnnrcgntaagkggaiaiadsgslslsanqgditflgntltst-sap 357

Qy    347 TPKRNAINIGSNGKFTELRAAKNHTIFFYDPITSEGT-SSDVLKINNGSAGALNPYQGTI 405
           |  |||| :||: | | ||||:  :|:|||||  |  | :|||| ||   : :   | |||
Db    358 tstrnaiylgssakitnlraaqggsiyfydpiasnttgasdvltinqpdsnspldysgti 417

Qy    406 LFSGETLTADELKVADNLKSSFTQPVSLSGGKLLLQKGVTLESTSFSQEAGSLLGMDSGT 465
           :|||| |:||| | |||  |   ||::|: | | |:  | |:   |:|  || | |  ||
Db    418 vfsgeklsadeakaadnftsilkqplalasgtlalkgnveldvngftqtegstllmqpgt 477

Qy    466 TLSTTAGSITITNLGINVDSLGLKQPVSLTAKGASNKVIVSGKLNLIDIEGNIYESHMFS 525
           |     :|::| | ::: :|   : ||:   ||:  : ::  |   |  || ||||
Db    478 klkadteaisltklvvdlsalegnksvsietaganktitltsplvfqdssgnfyeshti- 536

Qy    526 HDQLFSL-LKITVDADVDTNVDISSLIPVPAEDPNSEYGFQGQWNVNWTTDTATNTKEAT 584
           :| |:  | :   |   ::: | :|:  | : |   ||:|| |   |  ||:|  |  |
Db    537 -nqaftqplvvftaataasdiyidalltspvqtpephygyqghweatw-adtst-aksgt 593

Qy    585 ATWTKTGFVPSPERKSALVCNTLWGVFTDIRSLQQLVEIGATGMEHKQGFWVSSMTNFLH 644
           ||  ||: |:|||:::: | ::||  ||||:|||::   |  :  ::| | |   || |
Db    594 mtwvttgynpnperrasvvpdslwasftdirtlqqimtsqansiyqqrglwasgtanffh 653

Qy    645 KTGDENRKGFRHTSGGYVIGGSAHTPKDDLFTFAFCHLFARDKDCFIAHNNSRTYGGTLF 704
           |      : ||| | ||::|||    :::|: ||| || :||| ||  | |  |  :|:
Db    654 kdksgtnqafrhksygyivggsaedfsenifsvafcqlfgkdkdlfiventshnylasly 713

Qy    705 FKHSHTLQPQNYLRLGRAKFSESAIEKFPREIPLALDVQVSFSHSDNRMETHYTSLPESE 764
           :|   |        |    |  :|    ::||| |: |:|:|:: | |:| ||| ||::
Db    714 lqhraflg-------glpmpsfgsitdmlkdiplilnaqlsysytkndmdtrytsypeaq 766

Qy    765 GSWSNECIAGGIGLDLPFVLSNPHPLFKTFIPQMKVEMVYVSQNSFFESSSDGRGFSIGR 824
           |||:|   |  :|  |   |    | |: : | :| : ||  | :| || :: | |  |
Db    767 gswtnnsgalelggslalylpkeapffqgyfpflkfqavysrqqnfkesgaearafddgd 826

Qy    825 LLNLSIPVGAKFVQGDIGDSYTYDLSGFFVSDVYRNNPQSTATLVMSPDSWKIRGGNLSR 884
           |:| |||||  :  :    :  :::|  :: |||| ||:|  :|::|  ||     ||:|
Db    827 lvncsipvgirlekisedeknnfeislayigdvyrknprsrtslmvsgaswtslcknlar 886

Qy    885 QAFLLRGSNNYVYNSNCELFGHYAMELRGSSRNYNVDVGTKLRF 928
           ||||    ::   : : || |  | |||||:  |||| | :  |
Db    887 qaflasagshltlsphvelsgeaayelrgsahiynvdcglrysf 930


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Job time: 30196 sec
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